

Listing of the Claims

This listing of the claims will replace all prior versions, and listings, of claims in the Application:

1. (Currently Amended) A method for forming a three-dimensional polymeric structure, the method comprising:

providing at least one paint layer and a bonding layer, the bonding layer coupled to the at least one paint layer and including a first exterior surface;

extruding a structural sheet of at least one polymeric material at an extrusion temperature, the sheet having a thickness of at least 0.25 inches and a second exterior surface;

providing a thermoplastic material for use as an adhesive between the bonding layer and the structural sheet;

cooling the structural sheet from the extrusion temperature to a predetermined temperature;

joining the first exterior surface to the second exterior surface to form a thermoformable sheet by using heat from the structural sheet at the predetermined temperature to activate adhesive properties of the thermoplastic material;

forcing the thermoformable sheet against a three-dimensional mold while the sheet is at a thermoformable temperature to deform the sheet into a three-dimensional structure; and

removing the three-dimensional structure from the mold.

2. (Currently Amended) The method of claim 1, wherein the first exterior surface and the second exterior surface are joined to one another after the structural sheet has undergone at least 40 percent shrinkage from its extruded dimension total shrinkage while cooling from the extrusion temperature.

3. (Currently Amended) The method of claim 2, wherein the thermoformable sheet is joined to the laminate after the sheet has shrunk at least 90 percent from its extruded dimensions total shrinkage.

4. (Currently Amended) The method of claim 1, wherein at least portions of the first exterior surface and the second exterior surface ~~includes at least one~~ comprise the thermoplastic material, the thermoplastic material having an adhesive activation temperature and wherein the first exterior surface and the second exterior surface are joined to one another while at least one of the first exterior surface and the second exterior surface is at a temperature no less than the adhesion activation temperature and less than the extrusion temperature.

5. (Original) The method of claim 4, wherein the extrusion temperature is greater than 350 degrees Fahrenheit.

6. (Original) The method of claim 4, wherein the adhesion activation temperature is approximately 270 degrees Fahrenheit.

7. (Currently Amended) The method of claim 1, wherein the ~~first~~ second exterior surface of the structural sheet is less than the extrusion temperature when the ~~first~~ second exterior surface is joined to the second exterior surface.

8. (Original) The method of claim 1, wherein the first exterior surface of the structural sheet is at a temperature less than a melting point of the at least one polymeric material when the first exterior surface is being joined to the second exterior surface.

9. (Currently Amended) The method of claim 8, wherein the ~~first~~ second exterior surface of the structural sheet is less than approximately 266 degrees Fahrenheit when the first exterior surface is being joined to the second exterior surface.

10. (Currently Amended) The method of claim 1, wherein the ~~first~~ second exterior surface of the structural sheet is at a temperature less than approximately 190 degrees Fahrenheit when the first exterior surface is joined to the second exterior surface.

11. (Currently Amended) The method of claim 1, wherein the bonding layer ~~includes~~ comprises a covalent adhesive.

12. (Currently Amended) The method of claim 11, wherein the ~~bonding layer~~ includes covalent adhesive is an olefinic material.

13. (Original) The method of claim 1, wherein materials of the first exterior surface and the second exterior surface are cross linked when being joined to one another.

14. (Currently Amended) The method of claim 1, wherein at least one of the first exterior surface and the second exterior surface includes a reactive cross-link adhesive ~~with polyolefin~~.

15. (Currently Amended) The method of claim 1, wherein the first exterior surface includes a reactive cross-link adhesive ~~with polyolefin~~.

16. (Original) The method of claim 1, wherein the bonding layer has a thickness of less than about 0.2 mils.

17. (Original) The method of claim 1, wherein the at least one paint layer and the bonding layer are part of a laminate having a thickness of less than about 2 mils and wherein the thermoformable sheet consists solely of the structural sheet and the laminate.

18. (Original) The method of claim 1, wherein the mold is configured to deform the thermoformable sheet into a canoe hull.

19. (Original) The method of claim 1, wherein the structural sheet includes polyethylene

20. (Original) The method of claim 19, wherein the structural sheet is composed substantially entirely of polyethylene.

21. (Currently Amended) The method of claim 1, including providing a PVDF polyvinylidene fluoride layer coupled to the at least one paint layer.

22. (Original) The method of claim 1, wherein the at least one paint layer includes a backing color and at least one additional color distinct from the backing color.

23. (Original) The method of claim 22, wherein the at least one additional distinct color is provided in a plurality of shapes.

24. (Currently Amended) The method of claim 22 23, wherein the plurality of shapes are distinct from one another.

25. (Currently Amended) The method of claim 22 23, wherein the plurality of shapes are in the shape of environmental vegetation.

26. (Currently Amended) The method of claim 1, wherein the first second exterior surface is at a temperature less than 350 degrees Fahrenheit when joined to the second first exterior surface.

27. (Currently Amended) A method for forming a thermoformable panel, the method comprising:

providing at least one paint layer and a bonding layer coupled to the at least one paint layer and including a first exterior surface;

providing a structural sheet of at least one polymeric material, the sheet having a thickness of at least 0.25 inches and including a second exterior surface; and

providing a thermoplastic material for use as an adhesive between the bonding layer and the structural sheet;

cooling the structural sheet from the extrusion temperature to a predetermined temperature; and

joining the first exterior surface to the second exterior surface to form a thermoformable panel by using heat from the structural sheet at the predetermined temperature to activate adhesive properties of the thermoplastic material.

28. (Currently Amended) The method of claim 27, wherein the first exterior surface and the second exterior surface are joined to one another after the structural sheet has undergone at least 40 percent shrinkage from its extruded dimension total shrinkage while cooling from the extrusion temperature.

29. (Currently Amended) The method of claim 28, wherein the thermoformable sheet is joined to the laminate after the sheet has shrunk at least 90 percent from its extruded dimensions total shrinkage.

30. (Original) The method of claim 27, wherein the bonding layer includes a covalent adhesive.

31. (Original) The method of claim 27, wherein the bonding layer has a thickness of less than about 0.2 mils.

32. (Original) The method of claim 27, wherein the step of providing a structural sheet comprises extruding a structural sheet of at least one polymeric material.

B 33-47. (Withdrawn)

48. (New) The method of claim 1 wherein the predetermined temperature is an adhesive activation temperature for the thermoplastic material.

49. (New) A method for forming a thermoformable panel, the method comprising:
providing at least one paint layer and a bonding layer coupled to the at least one paint layer and including a first exterior surface;

providing a structural sheet of at least one polymeric material, the sheet having a second exterior surface;

cooling the structural sheet from the extrusion temperature to a predetermined temperature; and

using a thermoplastic material that is activated at the predetermined temperature for joining the first exterior surface to the second exterior surface to form the thermoformable panel.

50. (New) A method for forming a thermoformable panel, the method comprising:

providing at least one paint layer and a bonding layer coupled to the at least one paint layer and including a first exterior surface;

providing a structural sheet of at least one polymeric material, the sheet having a second exterior surface;

cooling the structural sheet from the extrusion temperature to a predetermined temperature; and

using a thermoplastic material that is activated at the predetermined temperature for joining the first exterior surface directly to the second exterior surface to form the thermoformable panel without using a backing sheet between the at least one paint layer and the structural sheet.